To: Leopard, Matthew[Leopard.Matthew@epa.gov]
Cc: Henry, Tala[Henry.Tala@epa.gov]; Doa, Maria[Doa.Maria@epa.gov]; Keifer, Leonard[Keifer.Leonard@epa.gov]; Townsend, Mark[Townsend.Mark@epa.gov]; Blunck, Christopher[Blunck.Chris@epa.gov]; Krasnic, Toni[krasnic.toni@epa.gov]; Kennedy, Amuel[Kennedy.Amuel@epa.gov]
From: Brinkhuis, Randall
Sent: Mon 1/27/2014 4:51:59 PM
Subject: Info on the WV chem spill from a listserv

Matt,

The following is a discussion that a number of chemical information specialists have been having about the chemicals involved in the WV Elk River spill.

http://www.nytimes.com/2014/01/23/us/a-second-chemical-was-part-of-west-virginia-chemical-spill-company-reveals.html

a mixture of glycol ethers known as PPH, with a similar function as MCHM

Later referred to in another story as polyglycol ethers

Are those chemically related to glymes, which were subject to a major action?

Randy

-----Original Message-----
From: **Ex. 6 - Personal Privacy** h]
Sent: Saturday, January 25, 2014 9:58 AM
To: chminf-l@list.indiana.edu
Subject: Re: [CHMINF-L] The plot thickens ... RE: Chemical information and the Jan 2014 West Virginia Elk River chemical release

Waited until this morning to research this (Ex. 6 - Personal Privacy

PPH has no postings in Wikipedia. It is listed in TSCA and Common Chemistry but it refers to poolypropylene. My suspicions that PP(anything) refers to polypropylene..., in the case polypropylene glycol. Considering there was a misspelling (lot of that going around), I tried PPG and found listings for polypropylene glycol in TSCA and Common Chemistry.

This excerpt from the PPG article in Wikipedia is illuminating. Looks like PPG is what is in the spill. I didn't look it up in PubChem and TOXNET.

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Properties[edit]

PPG has many properties in common with polyethylene glycol. The polymer is a liquid at room temperature. Solubility in water decreases rapidly with increasing molar mass. Secondary hydroxyl groups in PPG are less reactive than primary hydroxyl groups in polyethylene glycol. PPG is less toxic than PEG, so biotechnologicals are now produced in PPG.

(copied from IPCS Chemical Safety Information from Intergovernmental Organizations from www.inchem.org: Polypropylene glycol: Hazardous

characteristics:)

Combustible and in the form of vapour explosive when exposed to heat or flame. When heated to decomposition it produces acrid and irritating fumes (Sax, 1989).

The toxicity of polypropylene glycol is mainly due to the parent compound and not to its metabolites. Polypropylene glycol has an irritatant effect on direct contact with eyes, mucous membranes and possibly after prolonged contact with skin.

Polypropylene glycol causes CNS depression similar to that caused by ethanol but it is only one-third as potent. Cardiotoxic effects include arrhythmias and cardiac arrest. Renal and hepatic damage has been reported (Seidenfeld & Hanzlik, 1932).

Uses[edit]

PPG is used in many formulations for polyurethanes. It is used as a rheology modifier.

PPG is used as a surfactant, wetting agent, dispersant in leather finishing.

PPG is also employed as a tuning reference in mass spectrometry.

PPG is used as a primary ingredient in the manufacture of paintballs.

PPG is used to administer the drug Melarsoprol in patients suffering from second stage trypanosomiasis since the drug is insoluble in water. This mixture must be injected intravenously

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-----Original Message-----

From: Ex. 6 - Personal Privacy

Sent: Friday, January 24, 2014 4:22 PM

To: chminf-l@list.indiana.edu

Subject: Re: [CHMINF-L] The plot thickens ... RE: Chemical information and the Jan 2014 West Virginia Elk River chemical release

Great minds ... (simultaneous to boot)

I was just going to logon to the list after reading an article in the New York Times on the same topic:

A Second Chemical Was Part of West Virginia Chemical Spill, Company Reveals By JOHN SCHWARTZJAN. 22, 2014 NYT http://www.nytimes.com/2014/01/23/us/a-second-chemical-was-part-of-west-virginia-chemical-spill-company-reveals.html?ref=science

This paragraph is key:

The owner of the storage tank where the leak occurred, Freedom Industries, initially said it had released crude MCHM — or 4-methylcyclohexane methanol, a toxic blend of coal cleaners — in the spill. But on Tuesday, the company revealed that the tank, which leaked about 7,500 gallons into the ground by the Elk River, had also contained a mixture of glycol ethers known as PPH, with a similar function as MCHM.

Two items of note. By using the two word name the implication is made that MCHM is a "toxic blend" rather than a single chemical. Second of course is the identity of the second composition, again a matter of confusion. I'm going to research PPH and see how far I get. If indeed, as Dana has determined, the chmicals are polyglycol ethers they are most like polyethleneglycol ethers, di-, tri-, etc.

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-----Original Message-----

From: Ex. 6 - Personal Privacy

Sent: Friday, January 24, 2014 3:51 PM

To: chminf-l@list.indiana.edu

Subject: [CHMINF-L] The plot thickens ... RE: Chemical information and the Jan 2014 West Virginia Elk River chemical release

There is a report in yesterday's LA Times that "a mixture of polyglycol ethers also entered the water system ..."

Fortunately the HSDB database defaults to full text searching ... and a search for polyglycol ethers retrieves several records including:

Triethylene Glycol [112-27-6]

The nomenclature is confusing in the sense that 'glycols' presumably refer to diols

However, "Triethylene glycol is described as an oligomer of ethylene glycol.

So-called polyglycols are higher molecular weight adducts of ethylene oxide and distinguised by intervening ether linkages in the hydrocarbon chain."

Human Toxicity Excerpts :

/CASE REPORTS/ A 23-yr-old woman was brought to an emergency room after intentionally

ingesting one gulp (volume unspecified) of ... brake fluid.

...The patient was given milk to drink by her family and subsequently vomited. Upon arrival to the emergency room, she was unconscious ...

The above case study described the... brake fluid as 99.9% triethylene glycol. The material safety data sheet for /this brand of/ brake fluid, however, lists its ingredients as 30-60% polyglycol ethers; 30-60% borate of triethylene glycol monomethyl ether; 30-60% polyglycol; 0-10% corrosion inhibitor; and 0-10% dye.

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http://library.caltech.edu/collections/chemistry.htm

From: Bob Buntrock [Ex. 6 - Personal Privacy]

Sent: Thursday, January 23, 2014 12:43 PM

To: chminf-l@list.indiana.edu

Subject: Re: [CHMINF-L] RE: Chemical information and the Jan 2014 West Virginia Elk River chemical release

Below is the comment I made to the following C&EN article:

Volume 92 Issue 3 | p. 7 | News of The Week Issue Date: January 20, 2014 | Web Date: January 17, 2014 Toxicity Unknown

Pollution: Lack of hazard data hampers response to chemical spill in West Virginia By Jeff Johnson, Cheryl Hogue

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Robert Buntrock (January 22, 2014 3:37 PM) Part of the problem with obtaining data on MCHM is nomenclature. It's not in Merck Index, Sax's, or RTECS (at least not in my ancient--1978--copy). The Wikipedia article does have a good description, with usual excellent data box, and is current (1/21/14) with references to the WV spill. A referenced article from the Charleston Gazette exemplifies the nomenclature problem since several looked for methylcyclohexane and no further. Some renditions also named it methylcyclohexane methanol where I'm sure that the last word raised a lot of eyebrows The need for CAS Registry Numbers is well illustrated.

An even better source is PubChem (the compound number is cited in the Wikipedia article) including more data, synonyms, and links to the meager tox data. One is to the HSDB reference which lists Human Health Effects (skin and eye irritant with links to the Eastman tox studies) and Possible Routes of Human Exposure.

It's good to have links to the resources cited. Thanks, Dana.

More and more I'm going to Wikipedia early in a search process for chemical information and data. It's excellent and, as shown, current. The Wikipedia also had info on production.

As far as RTECS goes, it's no longer a free file, even via TOXNET, so unless I'm searching for hire, I never use it (only my 36 year old hard copy).

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From: Ex. 6 - Personal Privacy

Sent: Thursday, January 23, 2014 2:01 PM

To: chminf-l@list.indiana.edu<mailto:chminf-l@list.indiana.edu>

Subject: [CHMINF-L] RE: Chemical information and the Jan 2014 West Virginia Elk River chemical release

Dana

This is cool. Yesterday I used this in my class as an example of how Infotrac and Google plain can be more informative than PubMed or Biosis (which is as far as we have progressed). Wikipedia had an entry that already refers to the spill. I'll pass this on next week.

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Vanderbilt University

419 21st Ave. South

Nashville TN 37203

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Fax: 6

From: **Ex. 6 - Personal Privacy**

Sent: Thursday, January 23, 2014 12:49 PM

To: chminf-l@list.indiana.edu

Subject: [CHMINF-L] FW: Chemical information and the Jan 2014 West Virginia Elk River chemical release

FYI, Ex. 6 - Personal Privacy

From: NLM Toxicology/Environmental Health Update [mailto:NLM-TOX-ENVIRO-HEALTH-L@LIST.NIH.GOV] On Behalf Of NLM TOXENVLIST

Sent: Thursday, January 23, 2014 5:30 AM

To:

NLM-TOX-ENVIRO-HEALTH-L@LIST.NIH.GOV<mailto:NLM-TOX-ENVIRO-HEALTH-L@LIST.NIH.GOV>

Subject: Chemical information and the Jan 2014 West Virginia Elk River chemical release

Forwarded from the National Library of Medicine (NLM) Disaster Information Outreach by Librarians list serv You may be aware from multiple news sources that little information was available about 4-methylcyclohexanemethanol at the time of the spill in West Virginia's Elk River earlier this month. Since the spill, government and private sector scientists have contributed to collecting and verifying information about the chemical. As a result, there is now a page on the Centers for Disease Control (CDC) website about the chemical and the methodology used by CDC to develop its recommendations.

There is also a new record in the NLM Hazardous Substances Data Bank (HSDB) for the chemical 4-Methylcyclohexanemethanol, which has a Chemical Abstracts Service registry number (CASRN) of 34885-03-5. Other terms for the spilled substance are "MCHM" or "crude MCHM" or "4-Methylcyclohexane methanol."

Please note that in some social media and early news reports, the chemical was MISIDENTIFIED as Methylcyclohexanol (CASRN: 25639-42-3). This is NOT the correct chemical.

In chemical incidents, it is unusual for little online information to be available about a substance. Chemicals can often be readily identified using online resources such as TOXNET and WISER. In the absence of published information, local and state officials request consultation with local, state, federal and industry experts. Typically, following such an incident there is immediate, ongoing, extensive consultation and communication among responders and experts to determine appropriate actions.

When planning for providing health information following chemical incidents, it is critical for institutions and government agencies to know who to contact in uncommon situations as well as knowing the authoritative published sources of chemical information.

Sources

CDC web page on 2014 West Virginia Chemical Release
http://emergency.cdc.gov/chemical/MCHM/westvirginia2014/index.asp.

NLM HSDB record for 4-Methylcyclohexanemethanol

http://toxnet.nlm.nih.gov/cgi-bin/sis/search/r?dbs+hsdb:@term+@DOCNO+8182

NLM TOXNET

http://toxnet.nlm.nih.gov

NLM WISER

http://wiser.nlm.nih.gov<http://wiser.nlm.nih.gov/>

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